

UNITED STATES OF AMERICA and
THE STATE OF WISCONSIN,

Plaintiffs,

V.

NCR CORPORATION, et al.,

Defendants.

Case Action No. 1:10-CV-00910

Hon. William C. Griesbach

**PROPOSED FINDINGS OF FACT IN SUPPORT OF CERTAIN DEFENDANTS,¹
OPPOSITION TO THE PROPOSED CONSENT DECREE**

¹ “Certain Defendants” include Menasha Corporation, P.H. Glatfelter Company and WTM I Company.

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I. Under the Proposed Consent Decree, the United States Would Pay Less than 1% of the Estimated Response Costs and Natural Resource Damages and None of the Actual Cleanup Costs.

1. On December 1, 2010 the United States and the State of Wisconsin (“Plaintiffs”) filed a “Consent Decree with Brown County and the City of Green Bay” at Dkt. 31-1² (the “Proposed Consent Decree”). The proposed Consent Decree was not open to all parties. Declaration of Allison E. McAdam (“McAdam Decl.”) ¶ 5.
2. The Proposed Consent Decree would resolve all liability of the “Settling Federal Agencies” concerning the contamination of the Lower Fox River (“LFR”) and Green Bay (“the Site”) with poly-chlorinated biphenyls (“PCBs”) that is the subject of this action. Dkt. 31-1 at 9.
3. In the Proposed Consent Decree, the United States proposes to settle its liability for the Settling Federal Agencies at the Site – including remediation costs and natural resource damages (“NRDs”) – for \$4.5 million. Dkt. 31-1 at 14-15.
4. None of the \$4.5 million payment from the Settling Federal Agencies is required to go towards remediation costs. The United States proposes to pay \$745,000 to the State of Wisconsin, which is not implementing the cleanup anywhere at this Site, and to pay \$3,755,000 toward NRDs. Dkt. No. 31-1, at ¶ 7, 14-16. The Plaintiffs do not dispute that none of the \$4.5 million is for cleanup. *See* Dkt. 278 at 18-19.
5. The Plaintiffs’ settlement worksheet for the Proposed Consent Decree used \$1.5 billion as their estimate of the total cost for response costs and NRDs at the Site, including an uncertainty factor. Dkt. 173-1 at 10; *see also* Dkt. 278 at 19 n.26.
6. The remediation of OUs 2-5 is expected to cost more than \$700 million according to the United States’ most recent estimates. *See* Trial Testimony of Wendy Carney, Dec. 3, 2012, vol. 1 at 67:14-17. The OU1 parties already have completed remediation of OU1. Carney Trial Testimony at 75:21-25.
7. In 2000, the Plaintiffs estimated that the NRDs at the Site ranged from a low of approximately \$176 million to a high of approximately \$333 million. McAdam Decl. ¶ 2 & Att. A. In 2009 dollars, this range would be between approximately \$280 million and \$420 million. McAdam Decl. ¶ 3. Plaintiffs acknowledge that the total NRDs claim has been estimated to be at least \$287-\$423 million. Dkt. 278 at 20.
8. Plaintiffs used \$250 million as the estimate for the NRDs in supporting the Proposed Consent Decree. *See* Dkt. 278 at 20. Plaintiffs have acknowledged that the \$250 million figure for NRDs was “partially discounted” for settlement purposes. *Id.*

² All “Dkt.” citations herein are to the CM/ECF entries in *United States v. NCR Corp.*, Civil Action No.1:10-cv-00910-WCG filed in the Eastern District of Wisconsin. “Tr. Exh.” citations are to the Trial Exhibits in the December 2012 trial in this action.

9. The Proposed Consent Decree settlement amount of \$4.5 million for the Settling Federal Agencies is only 0.3% of the estimated total \$1.5 billion cost of the Site response costs and NRDs.

II. The USACE Increased the Scope of the Remedy and NRDs By Increasing the Areal Extent and Volume of Contaminated Sediment During Its Operations at the Nine Federal Dams on the LFR and Dredging Throughout the Site.

10. The United States has admitted that it is a potentially responsible party based on its dredging and disposal activities at the LFR and Green Bay Site. *See* Dkt. 532-1 at 25 (“Th[e] defendants may well have decent arguments that the Army Corps – and therefore the federal government is itself a potentially responsible party at this site, and that things like open water disposal made the Army Corps, and therefore the federal government, a potentially responsible party.”).
11. The dredging operations of the USACE released hazardous substances into the environment. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 226.
12. The United States has admitted that its activities resulted in redistribution of PCB-contaminated sediments at the Site, including transportation of PCBs to OUs 4 and 5. U.S. Response to RFA (Dkt. 512-2) at Resp. Nos. 227-29.

A. The USACE Is Liable Due to Operation of the Nine Federal Dams

1. The USACE Was Solely Responsible for Operation and Maintenance of the Nine Federal Dams on the LFR.

13. “The nine federal dams are owned and operated by the U.S. Army Corps of Engineers, Detroit District.” USACE (May 8, 2013, 10:50 AM), <http://www.lre.usace.army.mil/Missions/CivilWorks/DamSafetyProgram/LowerFoxRiverDams/ProjectInformation.aspx>.
14. The USACE has admitted that it is solely responsible for the operation and maintenance of the nine federal dams on the LFR. *See* June 7, 2012 Deposition of James Bonetti (“Bonetti Dep.”) (Tr. Exh. 6033) at 119:11-24. Dkt. 698, Stipulated Facts, ¶ 209.
15. The USACE maintained tainter gates at each of the federally owned and operated dams on the LFR. These tainter gates open from the bottom, and are used to control and monitor the water follow through the dam. Bonetti Dep. (Tr. Exh. 6033) at 154:14-23, 173:9-174:15, 259:8-260:4; September 6, 2012 Deposition of Nicholas J. Brittnacher (“Brittnacher Dep.”) (Tr. Exh. 6087) at 30:15-18; September 6, 2012 30(b)(6) Deposition of Joseph Gailani (“Gailani 30(b)(6) Dep.”) (Tr. Exh. 4036) at 59:12-60:15.
16. Trial Exhibit 9517 shows the cross-section of a tainter gate, based on engineering design documents for the tainter gates in the De Pere Dam. *See also* Trial Testimony of David Merrill (“Merrill Trial Testimony”), Dec. 17, 2012, vol. 9 at 2307:22-2309:5.

2. The USACE Dam Operations Increased the Volume of PCB-Contaminated Sediments, but USACE Refused to Consider PCB Contamination when Operating the Dams.

17. The presence, operation, and maintenance of dams have a major impact on sediment transport in any river. Management decisions regarding operations or maintenance can result in deposition, homogenization, erosional scouring, and remobilization of previously impounded reservoir sediment, including PCB-contaminated sediment. April 26, 2013 Declaration of James Evans (“2013 Evans Decl.”) ¶ 21.
18. The United States has admitted that it knew that PCB-contaminated sediments existed behind one or more of the locks and dams on the LFR. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 310. Dkt. 698, Stipulated Facts, ¶ 209.
19. Radioisotope data from deposits behind the USACE-owned and operated dams indicate that the reservoir sediments have been homogenized over time. 2013 Evans Decl. ¶ 26. Homogenization of sediment containing PCBs significantly increases the volume and distribution of sediment materials that are contaminated and must be remediated. *Id.*
20. Opening the tainter gates on the dams could have caused sluicing and removal of a portion of the sediments previously impounded behind the dam. Bonetti Dep. (Tr. Exh. 6033) at 154:14-23, 259:8-260:4; Brittnacher Dep. (Tr. Exh. 6087) at 30:15-18; Gailani 30(b)(6) Dep. (Tr. Exh. 4036) at 59:12-60:15. Dkt. 698, Stipulated Facts, ¶ 209.
21. The USACE has admitted that it routinely opened the tainter gates located within the dams at the Site from the bottom up and that such actions resulted in the sluicing and removal of contaminated sediments previously impounded behind the dams. Bonetti Dep. (Tr. Exh. 6033) at 142:15-143:3, 144:22-145:8, 151:4-9, 174:6-15.
22. Even after it knew that the sediments trapped behind the federal dams on the LFR contained PCBs over 1 ppm, the USACE took no affirmative action to limit the resuspension and relocation of contaminated sediments resulting from the operations of the federal dams. *See* Bonetti Dep. (Tr. Exh. 6033) at 226:12-227:7, 269:12-270:1 (procedures for opening and closing the tainter gates did not factor in the presence of contaminated sediments, before or after 1985).
23. By 1975 at the latest, the USACE was fully aware of the presence of PCBs in the sediments located at the Site. Gailani 30(b)(6) Dep. (Tr. Exh. 4036) at 129:13-23 & Dep. Exh. 4225A (Tr. Exh. 7389) at MENENF000026, 32. Dkt. 698, Stipulated Facts, ¶ 202; McAdam Decl. ¶¶ 7-8 & Att. B. Notwithstanding this knowledge, the USACE operated the tainter gates without any concern for the resuspension and relocation of the PCB contaminated sediments. Bonetti Dep. (Tr. Exh. 6033) at 170:11-19, 226:12-227:7, 269:12-270:1.
24. Dr. James Evans, Ph.D., an expert in sedimentary and environmental geology and surface water hydrology, 2013 Evans Decl. ¶¶ 4, 6-11; February 10, 2011 Declaration of James Evans Att. A (Dkt. 173-14 at 91-109), reviewed the available documentation concerning the USACE operation of the nine federal dams on the LFR, 2013 Evans Decl. ¶ 3.

25. Based on evaluation of the available evidence, Dr. Evans concluded that “the erosion, resuspension, mixing, and downstream redeposition of PCB-contaminated sediment in the LFR was facilitated in part by the presence, operation, maintenance, and remediation activities of the USACE dams.” 2013 Evans Decl. ¶ 27.

3. The USACE Dam Operations Increased the Scope of the Remedy and the Alleged NRDs.

26. Based on evaluation of the available evidence, Dr. Evans concluded that “the presence of the dams, their mode of operation and the maintenance activities performed on these structures has played a significant role in the environmental distribution of PCB-contaminated sediment in the LFR and to the extent and potential cost of necessary environmental remediation.” 2013 Evans Decl. ¶ 28.
27. To support an allocation to the USACE of \$4.5 million, or 0.3% of the remediation costs and NRDs, the United States would have to establish, at a minimum, that:
- the trapping efficiencies of the nine federally owned and operated dams on the LFR are low and that these reservoirs did not behave as sites of deposition;
 - sediment homogenization, which greatly increases the volume of contaminated sediment, did not occur in the reservoirs upstream of these nine dams;
 - reservoir pool changes caused by operations of the dams did not result in remobilization of sediment and transport of PCB-contaminated sediment downstream; and
 - partially opening the spillways or floodgates did not cause sluicing of reservoir sediment downstream.

2013 Evans Decl. ¶ 29. The United States has not made any of these showings, and, in fact, the evidence shows that the converse is true. *Id.* ¶ 30.

B. The USACE Is Liable Due to Its Dredging Practices in the LFR and Green Bay

1. The USACE Extensively Dredged and Disposed of Contaminated Sediments at the Site.

28. The USACE has conducted navigational dredging activities in the LFR and Green Bay for approximately the past 150 years. 2011 U.S. Answer (Dkt. 224) ¶ 165, Dkt. 698, Stipulated Facts, ¶ 188.
29. The USACE owned and operated the following dredges at the Site:
- a. The Dredge Winneconne and the Crane Barge Manitowoc (bucket dredges) were operated by the USACE at the LFR. U.S. Response to RFA (Dkt. 512-2) at Resp. Nos. 148 & 149; *see also* August 9, 2012 Deposition of Terry Long (“Long Dep.”) at 43:8-16; Brittnacher Dep. (Tr. Exh. 6087) at 17:24-18:6 (working as a

USACE employee on the Dredge Winneconne); September 5, 2012 Deposition of James R. Bumford (“Bumford Dep.”) at 126:18-127:8 (dredging downstream of the De Pere Dam took place starting around 1972, using the Crane Barge Manitowoc).

- b. The Dredge Kewaunee (dipper dredge) was operated by the USACE at the Site. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 160; *see also* Long Dep. at 43:8-16; Bumford Dep. at 48:1-12 (working on the Dredge Kewaunee below the De Pere Dam).
 - c. The Dredge Hains, the Dredge Markham, and the Dredge Hoffman (hydraulic dredges) were operated by the USACE at the Site. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 200; *see also* Long Dep. at 43:8-16; September 5, 2012 Deposition of Robert J. Mundelius (“Mundelius Dep.”) at 17:3-16 (duties at the Kewaunee USACE office included monitoring activities of the Dredge Markham); Bumford Dep. at 59:11-60:4 (the Dredge Hains operated on the LFR) & 90:21-91:19 (Dredges Hains, Markham, and Hoffman all operated at the Site).
 - d. The USACE owned dredges, including the Dredge Winneconne, June 28, 2012 Deposition of Steven M. Running at 24:24-25:9, and the Dredge Markham, June 13, 2012 Deposition of Michael K. O’Bryan at 102:2-15.
 - e. The USACE owned and operated its own dredges primarily throughout the 1960s and 1970s and transitioned to contract dredging starting in the late 1970s and 1980s. September 7, 2012 30(b)(6) Deposition of Jan Miller (“Miller 30(b)(6) Dep.”) at 37:24-38:18.
30. Between 1957 and 1998, over 16 million cubic yards of sediments between the De Pere Dam and Green Bay Harbor, including the harbor, were dredged by, or on behalf of, the USACE. 2011 U.S. Answer (Dkt. 224) ¶ 247. Dkt. 698, Stipulated Facts, ¶ 189.
31. The United States has admitted that at least some of the sediments dredged by the USACE between 1954 and the present were contaminated with PCBs. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 222.

a. Open-Water Disposal

32. Originally, sediment dredged by the USACE was put back into the water column – a practice known as “open-water disposal.” Later, the USACE placed dredged sediment in two confined disposal facilities (“CDFs”). Dkt. 518 at 7 (citing Dkt. 512-2 at 151). Dkt. 698, Stipulated Facts, ¶ 196.
33. There is no estimate for the long-term cost of maintaining these CDFs. May 16, 2013 Declaration of Paul Fuglevand (“2013 Fuglevand Decl.”) ¶ 46.
34. The United States has disposed of approximately 4.5 million (4,500,000) cubic yards of PCB-contaminated sediment into the open water of the LFR and Green Bay;

approximately 4.2 million cubic yards were disposed of in Green Bay. 2013 Fuglevand Decl. ¶¶ 22, 47.

35. In the late 1960s, the desirability of open water dumping of polluted dredge material was being questioned within the United States Government. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 254. Dkt. 698, Stipulated Facts, ¶ 199.
36. The Federal Water Pollution Commission published a May 1970 report that concluded that sediments in OU4 from its mouth to the turning basin in De Pere, Wisconsin, were heavily polluted by industrial wastes. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 306. Dkt. 698, Stipulated Facts, ¶ 200.
37. By January 1976, at the latest, sampling conducted on behalf of the USACE confirmed that the contaminants in at least some of the sediments in the LFR included PCBs, and the total content of each sample analyzed was below 1 part per million PCBs. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 308. Dkt. 698, Stipulated Facts, ¶ 201.
38. The USACE was aware that PCBs were present in the sediments at the Site at least by 1975. Gailani 30(b)(6) Dep. (Tr. Exh. 4036) at 129:13-23 & Exh. 4225A (Tr. Exh. 7389) at MENENF000026, 32. Dkt. 698, Stipulated Facts, ¶ 202; McAdam Decl. ¶¶ 7-8 & Att. B.
39. The USACE continued to engage in open water disposal of dredged materials for two years after the EPA instituted a new policy in 1972 that “all discharges to the aquatic environment involving PCBs be restricted to the lowest possible level,” though most of the sediment disposed of in open waters after 1970 originated from navigational channel deepening in Green Bay. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 262. Dkt. 698, Stipulated Facts, ¶ 203.
40. In 1977, Region 5 of the EPA determined that dredge sediments with PCB concentrations of 10 parts per million or lower were “not polluted” and were acceptable for open water disposal within Lake Michigan. 2011 U.S. Answer (Dkt. 224) ¶ 286. Dkt. 698, Stipulated Facts, ¶ 204.
41. The USACE, or contractors acting on behalf of the USACE, performed open water disposal of sediment from the LFR in the river and into the bay of Green Bay into 1966 and open water disposal of sediment in and from the bay of Green Bay into the bay until 1975. The open water disposal in 1975 involved the apparent movement of a small volume of sediment from one location to another location in Green Bay to enable the dredging vessel to access the Bayport CDF mooring and pump-out station for the start of the 1975 navigational dredging effort. Dkt. 518 at 7 (citing Dkt. 512-3 at 2-3); Dkt. 76-15; McAdam Decl. ¶¶ 9-14 & Atts. C-F.
42. From 1957 through 1975, the USACE disposed of over 3.2 million cubic yards of dredged sediments from the LFR and Green Bay at various open water locations within the LFR and Green Bay. Most of the dredged sediment that was placed in open water was dredged from the navigation channel in Green Bay and placed elsewhere in Green Bay. In addition, of that more than 3.2 million cubic yards, more than 2 million cubic

yards originated from deepening the bay navigation channel between 1969 and 1972. U.S. Response to RFA (Dkt. 512-2) at Resp. Nos. 120, 242, 257, 262, 265, 266; Tr. Exh. 7335; Tr. Exh. 7423; 2011 U.S. Answer (Dkt. 224) ¶ 264; Miller 30(b)(6) Dep. (Tr. Exh. 4042) at 121:3-122:20 & Dep. Exh. 4226E (Tr. Exh. 6341) at MENFOX00006197. Dkt. 698, Stipulated Facts, ¶ 189. *See also* Feb. 25, 2011 Declaration of Donald F. Hayes, Ph.D. (“2011 Hayes Decl.”) (Dkt. 258) ¶ 8.

43. Side-casting into water puts a portion of the dredged sediments back into the water column and the river. Gailani 30(b)(6) Dep. (Tr. Exh. 4036) at 113:14-17.
44. When it takes place, a portion of dredged material that is side-cast into the water may be carried away from a channel section by littoral and tidal currents. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 214. Dkt. 698, Stipulated Facts, ¶ 191.

b. Release and Resuspension of Dredged Material

45. A small amount of material escapes from a clamshell bucket on its trip up from the bottom. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 135; Gailani 30(b)(6) Dep. (Tr. Exh. 4036) at 68:21-69:23.
46. Bucket dredging performed by, or on behalf of, the USACE on the LFR allowed a small amount of material to flow back into the LFR. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 150; August 17, 2012 Deposition of William Gildernick (“Gildernick Dep.”) (Tr. Exh. 6169) at 32:7-21; Brittnacher Dep. (Tr. Exh. 6087) at 27:14-28:11, 29:6-9, 32:3-9; Bumford Dep. (Tr. Exh. 4032) at 26:19-27:14, 90:4-20. Dkt. 698, Stipulated Facts, ¶ 190.
47. In some circumstances, bucket dredging with a clamshell bucket can distribute a small portion of dredged sediments throughout the water column. 2011 U.S. Answer (Dkt. 224) ¶ 177; U.S. Response to RFA (Dkt. 512-2) at Resp. No. 138; Gailani 30(b)(6) Dep. (Tr. Exh. 4036) at 68:21-69:23 & Dep. Exh. 4177 (Tr. Exh. 6460) at BOLDT00665948. The material released toward the top of the water column will typically travel relatively further downstream than material released near the sediment bed. Gailani 30(b)(6) Dep. (Tr. Exh. 4036) at 81:17-83:13. Whether this occurs in any one case will depend upon a variety of factors, including the existence of estuary conditions that affect the temperature of the water within the water column. Gailani 30(b)(6) Dep. (Tr. Exh. 4036) at 81:17-83:13. Dkt. 698, Stipulated Facts, ¶ 192.
48. Dredges used by the USACE and its contractors resulted in the resuspension of a portion of the dredged sediment. Dkt. 518 at 7 (citing Dkt. 512-3 at 2). Dkt. 698, Stipulated Facts, ¶ 193.
49. On many occasions when the USACE dredged in the LFR, it caused the resuspension and relocation of a portion of the sediments in the LFR. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 285; Gailani 30(b)(6) Dep. (Tr. Exh. 4036) at 148:24-149:22 & Dep. Exh. 4177 (Tr. Exh. 6460) at BOLDT00665938. Dkt. 698, Stipulated Facts, ¶ 193.

50. Resuspension during bucket dredging is higher if scow overflow is allowed to occur than if scow overflow is not allowed to occur. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 143; Gailani 30(b)(6) Dep. (Tr. Exh. 4036) at 110:7-11 & Dep. Exh. 4225B (Tr. Exh. 7714) at DOJ172746; 2011 U.S. Answer (Dkt. 224) ¶ 180. The USACE eventually discontinued the practice of scow overflow in approximately 1977. Miller 30(b)(6) Dep. (Tr. Exh. 4042) at 208:10-25 & Dep. Exh. 4225B (Tr. Exh. 7714) at DOJ172746. Dkt. 698, Stipulated Facts, ¶ 194.
51. Side-casting also results in high concentrations of suspended sediments that are available for downstream transport during the disposal operation and creates unnatural mounds of soft sediments within the river susceptible to erosion. 2011 Hayes Decl. (Dkt. 258) ¶ 11.
52. As recently as 2009, the EPA claimed that dredging of the navigational channel of the LFR and turning basins at Georgia-Pacific and the East River were stirring up sediment in the LFR and would contribute to the spread of PCBs. 2011 U.S. Answer (Dkt. 224) ¶ 290. Dkt. 698, Stipulated Facts, ¶ 205.
53. USACE stated in a January 29, 2009 letter to USEPA, “There is no significant difference in the character or contaminant levels of the material we previously dredged from what we planned to dredge in FY 2010. Therefore, we cannot justify this increased cost on the basis of an environmental necessity.” 2011 U.S. Answer (Dkt. 224) ¶ 290. Dkt. 698, Stipulated Facts, ¶ 206.
54. In April 2010, the EPA and USACE entered into a Memorandum of Agreement (the “April 2010 MOA”) (Tr. Exh. 7316), pursuant to which the USACE agreed to use an environmental dredge (production Cable Arm closed bucket) for navigational dredging and conduct additional water quality monitoring activities paid for by the EPA while the USACE performed its navigational dredging operations.

2. Impact of Dredging Operations on PCB-Contaminated Sediment.

55. At least some of the sediments dredged in the LFR by the USACE between 1954 and the present contained PCBs. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 222. Some of the sediments in and around the LFR that were dredged and disposed of in open water by the USACE were contaminated with PCBs. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 224. Dkt. 698, Stipulated Facts, ¶ 198.
56. The USACE navigational dredging occurred within areas of the Site that now are known to be impacted by PCBs. USACE navigational dredging relocated a portion of the PCB-impacted sediment by resuspension, open water disposal, and placement in CDFs. Dkt. 698, Stipulated Facts, ¶ 195.
57. The navigational dredging activities by the USACE released a certain amount of hazardous substances into the environment that were generated by third parties. U.S. Response to RFA (Dkt. 512-2) at Resp. No. 226. Some PCB-contaminated sediments were transported by or behalf of the USACE from OU4 to OU5, where open water disposal locations and Confined Disposal Facilities were located, U.S. Response to RFA (Dkt. 512-2) at Resp. No. 227, and a certain amount was redistributed in the LFR and

Green Bay, U.S. Response to RFA (Dkt. 512-2) at Resp. Nos. 228, 229. Dkt. 698, Stipulated Facts, ¶ 207.

58. The USACE dredging practices at the LFR and Green Bay – including side-casting and open-water disposal, use of inappropriate equipment to handle contaminated sediments, and dredging outside of the federally authorized channel dimensions – were generally improper. For example, environmental buckets were available for use, and it was standard practice in the industry to not allow overflow. 2011 Hayes Decl. (Dkt. 258) ¶ 7.
59. The USACE continued to use generally improper dredging practices as late as September 2002. 2011 Hayes Decl. (Dkt. 258) ¶ 7; *see also id.* ¶¶ 23-26.
60. The USACE performed some dredging operations in the “navigational channel” of the LFR and Green Bay. The USACE is responsible for maintaining the navigational channel prism – width and depth – within certain limits prescribed by federal legislation. The USACE dredged some sediment beyond the limits set forth in these federal authorizations. 2011 Hayes Decl. (Dkt. 258) ¶ 17.

3. The USACE Dredging Operations Increased the Scope of the Remedy and the Alleged NRDs.

61. The open water disposal in Green Bay likely spread a portion of the dredged spoils over a larger area than the area that the same material had encompassed prior to dredging. Bumford Dep. (Tr. Exh. 4032) at 80:13-81:14. Dkt. 698, Stipulated Facts, ¶ 189.
62. Side-casting at the LFR resulted in environmental damage due to placement of material from a narrow and relatively low biological value location in the bottom of the channel to much more biologically rich shallow water areas outside the channel. 2011 Hayes Decl. (Dkt. 258) ¶ 11. The shallower areas where the USACE side-cast dredged material are much more likely to be valuable fish spawning zones than the navigation channel. *Id.* ¶ 12.
63. Paul F. Fuglevand, an expert in dredging and environmental remediation, 2013 Fuglevand Decl. ¶¶ 4-5, 7-11, reviewed the evidence in this case to estimate a reasonable allocation to the United States for the USACE dredging operations. Based on his review and expert opinion, Mr. Fuglevand concluded that the \$4.5 million settlement proposed by the United States is not a reasonable approximation of the United States’ liability from the USACE dredging operations. 2013 Fuglevand Decl. ¶ 53.
64. USACE placement of contaminated dredge spoils throughout the Site resulted in increased areal extent of PCBs and increased difficulty of removing and/or capping the PCB-contaminated sediments. For example, open water disposal of contaminated dredge spoils by the USACE in OU4 increased the cost of remediating those areas by approximately \$19 million, before adding any uncertainty factor. 2013 Fuglevand Decl. ¶ 49.
65. In the settlements it has entered into with other parties, the Plaintiffs have used a 50% “uncertainty factor.” 2013 Fuglevand Decl. ¶¶ 42, 44. No uncertainty factor was used by

the governments in the Proposed Consent Decree for estimating the Settling Federal Agencies' reasonable share of the NRDs at the Site. *See* Dkt. 31-1 ¶ 8.

66. Dredging by the USACE beyond the federally authorized navigation channel resulted in a deeper channel that encouraged additional sedimentation of contaminated sediment. These deep deposits would not be present but for the USACE unauthorized overdredging. 2011 Hayes Decl. (Dkt. 258) ¶ 17.
67. Contaminated sediments at unnaturally deeper locations directly impact the remedy scope and costs. 2011 Hayes Decl. (Dkt. 258) ¶ 18.
68. Dr. Hayes, an expert retained by NCR, concluded that without the USACE sidecasting practices, the areas outside the channel may not have required the same level of intensive remediation, if any remediation at all, 2011 Hayes Decl. (Dkt. 258) ¶ 12, and estimated that the USACE practices of side-casting and overdredging increased remediation costs approximately \$28.8 million to \$42.1 million, *id.* ¶ 28.
69. Dr. Hayes also reviewed dredging records and river bathymetry data to identify areas where there is PCB contamination below the authorized navigational channel depth and estimated that the cost of remediating these areas is approximately \$3.9 million to \$5.9 million. 2011 Hayes Decl. (Dkt. 258) ¶¶ 20-21 & Table 3.
70. The United States has admitted that USACE dredging and disposal of contaminated sediments at the Site resuspended and moved a certain amount of PCBs and that the disposal of dredged material in Green Bay probably caused a net increase in PCBs in the Bay, where most of the injuries to natural resources are alleged to have occurred. 2011 U.S. Answer (Dkt. 224) ¶ 70. Dkt. 698, Stipulated Facts, ¶ 208.
71. USACE placement of contaminated dredge spoils throughout the Site resulted in increased NRDs. For example, the USACE's open water disposal of contaminated sediments in OU5 could account for \$25 million to \$195 million in NRDs, before any uncertainty factor is applied. 2013 Fuglevand Decl. ¶¶ 42, 50.
72. The full extent of the increase in NRDs caused by USACE disposal of contaminated sediment cannot be fully quantified at this time. 2013 Fuglevand Decl. ¶ 50.
73. Plaintiffs have claimed that the primary exposure pathway is through contaminated surface sediments that are exposed to the food web. *See, e.g.*, Unilateral Administrative Order (Tr. Exh. 1127) at EPAAR282075-76 (alleging that PCBs at the Site are dangerous because of impacts to fish and wildlife, and, in turn, humans, and risk of loss of contaminated sediments to Green Bay); Trial Testimony of Dr. Michelle Watters, Ph.D., Dec. 3, 2012, vol. 1 at 29:23-31:6 (explaining that the exposure pathway identified by ATSDR in its public health assessment was from sediment to fish to humans); *see also* Plaintiffs Post-Trial Proposed Findings of Fact and Conclusions of Law (Dkt. 738) ¶ 193.
74. Side-casting and open water disposal of dredged spoils redistributed PCBs that had been previously buried in the channel beneath the biologically active zone, and reintroduced contamination to the food web. 2011 Hayes Decl. (Dkt. 258) ¶ 22.

75. The United States' witness Richard Fox testified at the December 2012 trial that the USACE dredged what was likely highly contaminated sediment from the navigation channel in the vicinity of the former Georgia-Pacific facility in OU4B, and dumped that sediment back into the river upstream in OU4A, in an area outside of the navigation channel that now requires extensive remediation. Trial Testimony of Richard Fox, Dec. 4, 2012, vol. 2 at 278:10-283:23 & Tr. Exh. 2001 at BOLDT00879654. *See also* Gildernick Dep. at 76:5-79:9 & Dep. Exh. 4203 (Tr. Exh. 6171).
76. Victor Magar, an expert in sediment management, and contaminant fate and transport in the environment, who testified in the December 2012 trial on behalf of the OU1 parties, submitted a declaration in this action in response to the Proposed Consent Decree, which highlights an area in OU4A that requires extensive remediation as a result of the USACE dumping of dredged spoils taken from highly contaminated areas in OU4B. Nov. 8, 2011 Declaration and Report of Victor S. Magar, Ph.D., P.E., Dkt. 252-1 at 8-9.
77. To the extent there are NRDs from biological exposure to PCB-contaminated sediments, the USACE's actions are responsible for a portion of them. 2011 Hayes Decl. (Dkt. 258) ¶ 22.
- III. The Proposed Settlement Does Not Fairly or Reasonably Reflect the United States' Responsibility for the Breadth of PCB Contamination at the Site or the Increased Scope of the Remedy and NRDs Due to the USACE Operations.**
78. The Proposed Consent Decree is not supported by the evidence which establishes that the USACE's dredging activities, including the open water disposal of contaminated sediments in both the stretch of the LFR between the DePere Dam and Green Bay, and in the bay of Green Bay, may have significantly increased the remediation costs due to the redistribution of the areal extent of PCBs. 2013 Fugelvand Decl. ¶¶ 40-42, 49.
79. The Proposed Consent Decree is not supported by the evidence which establishes that the USACE's dredging activities, including the open water disposal of contaminated sediments in both the stretch of the LFR between the DePere Dam and Green Bay, and in the bay of Green Bay, may have significantly increased the extent of the NRDs, particularly in the bay of Green Bay (OU5). 2013 Fugelvand Decl. ¶¶ 43-44, 50-51.
80. The evidence shows that the Proposed Consent Decree is not supported by the evidence, which establishes that the USACE's operation of the nine federal dams on the LFR played a significant role in the erosion, transport, and deposition of PCB-contaminated sediment at the Site. 2013 Evans Decl. ¶¶ 30, 31.
81. The \$4.5 million allocation to the USACE in the Proposed Consent Decree does not reasonably approximate the potential relative liability of the Settling Federal Agencies, particularly the USACE, against the potential liability of the remaining defendants. 2013 Evans Decl. ¶ 33. 2013 Fugelvand Decl. ¶ 41.